

REMARKS

A new Abstract of the Disclosure is provided herein pursuant to the Examiner's requirement.

It is noted that the election, with traverse, of Group I, claims 1-21, has been maintained by the Examiner. Accordingly, claims 22-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b). Claims 15-18 and 21 have been cancelled. Claims 1-14, 19 and 20 remain for consideration.

It is proposed to amend the Claims as discussed below in order to overcome the Objections and the Rejections in the present application..

The amendments made herein do not raise an issue of new matter.

- (I) Cancellation of the phrase "the former/the latter" in Claims 7 and 16
 - (II) Cancellation of the word "series" throughout the claims
 - (III) Replacement of the word "obtainable" with "obtained" in Claim 6
 - (IV) Replacement of the phrase "directly joinable" with "for directly joining" in Claim 20
- The rejections are traversed. Reconsideration is requested.

Claim Rejections - 35 USC §102 and §103

1. Examiner's position

The Examiner points out that Claims 20 and 21 are rejected under 35 U.S.C. 102 (b) as being anticipated by Ikuta et al. (US 2003/0118839, hereinafter "Ikuta").

Further, the Examiner points out that Claims 1-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Auber et al. (AU674465, hereinafter "Auber") in view of Matsumoto et al. (US 4,410,595, hereinafter "Matsumoto").

The rejections of claims 15-18 and 21 are moot since these claims have been cancelled.

2. Amendment

In order to clarify the differences between the present invention and the cited references, it is proposed to amend the Claim(s) as shown below;

- (I) to cancel the case “(IIa)” from Claim 1,
- (II) to cancel the case “(IIb)” from Claim 20, and
- (III) to specify Claim 20 with Claim 3, Claim 5 and now cancelled Claim 21.

3. Cited references

(3a) Ikuta discloses the following invention.

1. A composite comprising a vulcanized rubber member formed by a vulcanization of a non-silicone-series unvulcanized rubber, and a resin member comprising a thermoplastic resin and directly bonded to the rubber member, which comprises a combination of a rubber member vulcanized with a radical-generating agent and a resin member comprising a thermoplastic resin having at least 2 atoms, on average, selected from a hydrogen atom and a sulfur atom per molecule, and each atom has an orbital interaction energy coefficient S of not less than 0.006....

2. A composite according to claim 1, wherein the thermoplastic resin comprises at least one member selected from the group consisting of a polyamide-series resin, a polyester-series resin, a polyether-series resin, a polyolefinic resin, a polyurethane-series resin, and a thermoplastic elastomer.”

Ikuta contains the following description.

“[0039] As the polyamide-series resin, there may be mentioned an aliphatic polyamide-series resin, an alicyclic polyamide-series resin, and an aromatic polyamide-series resin, and the aliphatic polyamide-series resin is practically used. ...[0040] As the alicyclic polyamide-series resin, there may be exemplified a polyamide in which an alicyclic diamine and/or an alicyclic dicarboxylic acid is used as at least part of the aliphatic diamine component and/or the aliphatic dicarboxylic acid. The alicyclic polyamide includes, for example, a condensed compound of the aliphatic dicarboxylic acid and an alicyclic diamine component [e.g., a C₅₋₈cycloalkyl diamine such as cyclohexyl diamine; a bis (aminocyclohexyl)alkane such as bis(aminocyclohexyl) methane and 2,2-bis(aminocyclohexyl)propane].”

(3b) Auber discloses the following invention.

1. A bilayer article comprising a lightened thermoplastic elastomer of the polyetheramide type adhering, by itself, to a non-lightened thermoplastic.

2. Bilayer article according to 1, in which the non-lightened thermoplastic is chosen from polyetheramides, polyetheresters, polyurethanes.”

Auber contains the following description about the polyetheramide.

“The polyetheramide which is employed as the lightened material may be chosen from random polyetheramides (that is to say, formed by the random linking of the various monomer constituents) or block polyetheramides, that is to say, formed by blocks having a certain chain length of their various constituents.

Block polyetheramides result from the copolycondensation of polyamide blocks having reactive end groups with polyether blocks having reactive end groups, such as, inter alia:

- 1) Diamine-terminated polyamide blocks with dicarboxylic-terminated polyoxyalkylene blocks;
- 2) Dicarboxylic-terminated polyamide blocks with diamine-terminated polyoxyalkylene blocks obtained by cyanoethylation and hydrogenation of polyetherdiols;
- 3) Dicarboxylic-terminated polyamide blocks with aliphatic alpha,omega-dihydroxylated polyoxyalkylene or polyetherdiol blocks, the polyetheramides being obtained, in this particular case, from polyetheresteramides.

The composition and manufacture of such block polyetheresteramides have been described in French Patent Nos. 74/18913 and 77/26678 in the name of the Applicant Company.

Particularly well suited for the implementation of the present invention are the block polyetheresteramides obtained by polycondensation of dicarboxylic polyamides of 11 or 12 blocks of molecular weight between 300 and 15,000 with polyoxytetramethylene glycol blocks of molecular weight between 100 and 6,000, with a content of from 95 to 15% by weight of polyamide blocks for 5 to 85% by weight of polyoxytetramethylene glycol. (page 4, line 12 to page 5, line 17)”

(3C) Matsumoto discloses the following invention.

1. A laminate having at least two laminae bonded to each other;

at least one of the laminae being comprised of a thermoplastic resinous composition consisting essentially of, based on the weight of the resinous composition,

(a) 5 to 70% by weight of a thermoplastic polyurethane elastomer, and

(b) 30 to 95% by weight of a modified polyolefin which is an olefin polymer having grafted thereon 0.005% through 5% by mole of maleic acid or maleic anhydride per mole of the recurring unit in the olefin polymer, and

the other of the laminae being comprised of at least one material selected from the group consisting of vinyl chloride polymer resins, vinylidene chloride polymer resins, thermoplastic polyester resins, ethylene/vinyl alcohol copolymer resins, polyamide resins, polyacrylonitrile and nitrile copolymer resins comprising at least 50% by weight of units derived from an unsaturated nitrile, polystyrene and styrene copolymer resins, polymethyl methacrylate and acrylic or methacrylic acid ester copolymer resins, polyurethane resins, olefin polymer resins, polyacetal resins, polyvinyl acetal resins, polycarbonate resins, polyphenylene oxide resins, polysulfone resins, epoxy resins, phenol-formaldehyde resins, unsaturated polyester resins, melamine-formaldehyde resins, urea-formaldehyde resins, natural and synthetic rubbers, cellulosic materials, cement, glass and other ceramic materials and metals.

4. Comparison of the present invention with the cited references

(a) Claims 1-14, 19 and 20

The cited references (Auber and Matsumoto), as noted by the Examiner, are absolutely silent with regard to the specific non-urethane thermoplastic resin "(Ib)" in the case (Ia) of Claim 1.

Therefore, even if Matsumoto is combined with Auber, the present invention cannot be predicted.

(b) Claim 20

Ikuta fails to disclose the specific non-urethane thermoplastic resin "(Ib-1)" and "(Ib-2)" having an amino group in a specific concentration.

Further, the present invention cannot be predicted from Ikuta. In detail, Ikuta is silent on a specific combination of a specific alicyclic polyamide component with a specific non-alicyclic

polyamide component, and the specific concentration of an amino group in "(Ib-1)". Moreover, Ikuta is silent on an amino group-containing compound in "(Ib-2)".

(c) Unexpected advantages

According to the present invention, unexpected advantages can be obtained. That is, it cannot be understood from the references how the bonded strength between a non-urethane resin member and a thermoplastic polyurethane resin member can be improved.

On the other hand, in the present invention, since a non-urethane thermoplastic resin contains a polyamide component having an alicyclic ring and/or an amino group-containing compound, the molded composite article comprising a polyurethane resin member and the non-urethane thermoplastic member ensures having a significantly improved bonded strength between both resin members. Moreover, independently of the species of thermoplastic polyurethane resin to be used, both the resin members can be firmly bonded with each other. Furthermore, the amino group-containing compound achieves improvement in joinability of the non-urethane thermoplastic resin to the thermoplastic urethane resin member regardless of the species of the thermoplastic resin. These advantages are also evidenced by the Examples in the present description.

Therefore, the subject matter of the claims is not disclosed, taught or suggested by the cited references, whether considered alone or in combination. In short, there is no motivation which would lead one skilled in the art to the claimed invention based on the references cited in the present application.

Accordingly, it is believed that this application is now in condition for allowance. Favorable action to this effect is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Raymond C. Stewart, Reg. No. 22,463 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Application No. 10/574,265
Amendment dated December 8, 2009
Reply to Office Action of September 8, 2009

Docket No.: 2224-0255PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: December 8, 2009

Respectfully submitted,

By Raymond C. Stewart

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